

is absolutely necessary. Great care should be used in selecting the mechanism desired, so that it meets the clamping or equalizing conditions of the work in hand. The examples shown are in many cases obtained from milling fixture designs, but the principles apply equally to drill jigs.

As an example in the choice of clamping mechanism, consider the piece *A*, Fig. 1. It is required to drill the hole *B*. A simple way of clamping this piece is illustrated in Fig. 1, using a hexagon nut and washer. The time required for running on and off the hexagon nut is saved in the design shown in Fig. 2, using a quarter-turn knob. Stud *B* has a flat milled on both sides of

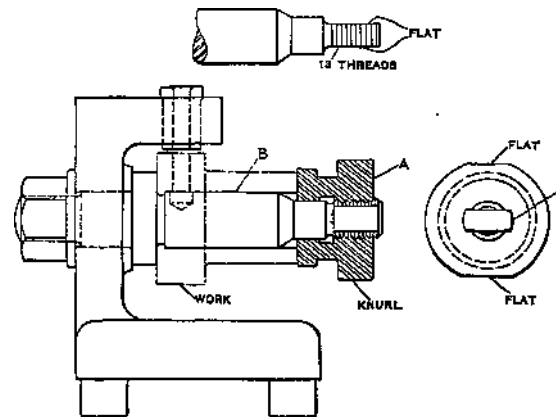
*MacJinery*

Fig. 2. Using a Quarter-turn Knob for Clamping the Work

its threaded portion. The slot in knob *A* slides on over this flat and a quarter turn clamps the work. If the variation in the length of the work is not too great, this makes a rapid clamping arrangement.

Fig. 3 shows another means

of clamping the same piece, in which the variation in length of the work and the time required for turning the knob to match the flat on the stud has been considered. The slotted washer *A* and knob *B* are dropped over stud *C*; washer *A* is held against knob 5, which can then be screwed up as freely as a solid knob. This can be used for a